

Descriptions of Some Species of the Genus *Pulvilligera*  
Strand from the South and Southwest Pacific  
(Hymenoptera: Chalcidoidea; Torymidae)

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STRAND (1911) proposed the tribe Pulvilligerini based on a new monobasic genus, *Pulvilligera*, the type of which is *P. maxima*, described by him in the same paper from six males collected by H. Sauter in 1908 at Taihanroku, Formosa. He made use of the key to the tribes of Toryminae (= Callimominae) published by Schmiedeknecht (1909), obviously without being aware of the error therein, which described the tribe Megastigmini as having one calcar on the hind tibia, instead of two that the group really possesses. If Strand had realized this fact, he would probably have placed *P. maxima* in the tribe Megastigmini, because its close affinity with the Megastigmini, except for this one character, was clearly indicated at the time he proposed the new names.

Crawford (1914) treated Pulvilligerini as a subfamily without having seen *P. maxima*. In his key, Pulvilligerinae was differentiated from Megastigminae only on the basis of "whorls of hair" on the male antennae. The identity of the Pulvilligerinae has remained completely obscured and unrecognizable for many years. Girault (1915) stated that there "is an undescribed genus in this group [Megastigmini] like *Megastigmus* but the male antennae are very slender and with whorls of hair," but he had not obtained females with certainty. In 1928 the same worker described a species which he placed in the genus *Pulvilligera*.

During 1944 a long series of specimens, part of which appear to represent the same

species described by Strand from Formosa, was collected on one of the Solomon Islands. In a recent publication by the writer (1949) the Pulvilligerinae were omitted from the key (p. 259) pending further study of *P. maxima* as well as of the two new species that are described later in this paper. This study has led to non-recognition of the name Pulvilligerini and of the subfamily name based on it. It is proposed here to treat *Pulvilligera* merely as a genus of the tribe Megastigmini.

While the male antennae of the three species at hand are distinctly different from those of any other known megastigmine species, the females are very much like those of other species of the genus *Megastigmus*. The value of this antennal character of the male as a basis for the recognition of tribal and subfamily groups is extremely doubtful because males of different species within several chalcidoid genera may exhibit striking differences in appearance of the antennae.

*Acknowledgment:* The writer gratefully acknowledges the kindness of Mr. C. F. W. Muesebeck, Chief of the Division of Insect Identification, U.S.D.A., who made it possible to study this material at the U. S. National Museum.

Tribe MEGASTIGMINI

Genus PULVILLIGERA Strand

*Pulvilligera* Strand, Ent. Rundschau 28: 59, 1911. Monobasic. Type: *P. maxima* Strand.

Species of this genus differ from those of the typical genus as follows:

<sup>1</sup>Glendale, West Virginia. Manuscript received March 31, 1950.

*Male*: Antenna slender with distinct three-segmented club bearing short, thick, almost recumbent pubescence; funicle with segments of nearly equal length, each swollen basally, less so distally, and with long, stiff, inclined or suberect pubescence, sparser than that on the club and arranged in somewhat irregular whorls (Fig. 1).

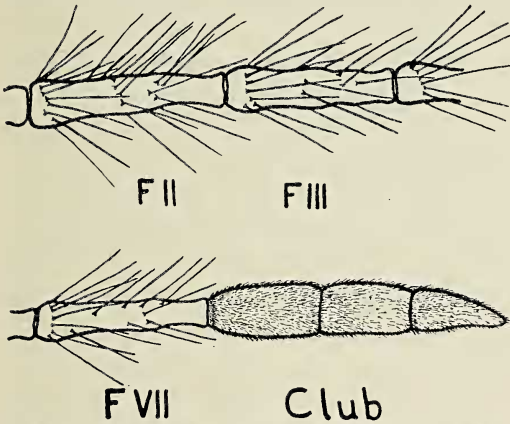


FIG. 1. Sections of typical male antenna of the genus *Pulvilligera*.

*Female*: Antenna with an indistinct three-segmented club, and all the funicular segments of about the same width.

#### *Pulvilligera maxima* Strand

*Male*: Length 13.0 mm.; abdomen 5.3 mm. Outline of head from above, oval, less than twice as thick as long, depressed on vertex and along an oblique line from each lateral ocellus to each compound eye, the vertex and most of the ocellar area with fine transverse rugulae which extend down over temples, the sculpture on the front sharper and more-or-less vertical, the occipital carinae sharp and evenly arcuate above; the ocellocipital line about twice as long as either the ocellocular or posterior ocellar line; scape compressed, evenly curved, and slightly longer than combined lengths of pedicel, ring segment, and FI; pedicel wider than FI; all funicular segments several times longer than thick, slightly decreasing in length progres-

sively from FI to and including FVII; club only a little shorter than combined lengths of FVI and FVII; antennal scrobe deep but not bounded by a distinct carina above. Pronotum a little longer than wide, sides nearly smooth, above with distinct transverse rugae, the emargination on anterior margin shallow; mesonotum to transverse line with prominent transverse rugae, those on the mesopraescutum more arcuate and sharpest, behind transverse line at most only weakly sculptured to smooth; basal segment of hind tarsus slightly longer than segments 2-5 combined. Propodeum with slight median longitudinal depression and crossed by numerous irregular rugae becoming more circular on either side of depression posteriorly; abdomen subdepressed.

Color mostly brownish to greenish-yellow with black (and brown) markings. Head brownish-yellow with front below antennal bases extending onto clypeus, along frontogenal suture, gena below, the occiput bordering foramen magnum, three circular spots on vertex (one above each compound eye, another near the occipital carina), the area surrounding the ocelli and extending to compound eye and most of the antennal scrobe dark brown to black; most of scape and pedicel brownish-yellow, remainder of antenna black. Pronotum brownish-yellow (with shade of greenish-yellow) except below at sides and three separate longitudinal stripes above (two lateral, one median) which are black, the median weaker anteriorly; mesopraescutum and each mesoscutum with longitudinal median area dark brown, the remainder greenish-yellow; outer margin of axilla suffused with brown, the inner margin greenish-yellow; parapsidal furrow black; mesoscutellum greenish-yellow with a median longitudinal somewhat diamond-shaped black spot that extends to beyond the transverse line; prepectus and mesepisternum brown, remainder of pleura mostly brownish-yellow; median piece of metanotum greenish-

yellow; legs brownish-yellow except front coxa posteriorly and hind coxa anteriorly infuscated. Propodeum greenish to brownish-yellow except for the median depression, shallow groove below propodeal spiracle, and circular depression near posterior margin which are dark brown to black; tergum III (apparent first), except yellowish spot at side and sterna, black; each of terga IV–VI inclusive bordered posteriorly by narrow amber margin and with a circular lateral black spot above, otherwise these terga are predominantly reddish-brown above and light yellow at sides; tergum VII yellow except for narrow posterior amber margin.

Pubescence on body rather fine and sparse, black on antennae and dorsal areas of body and wings, remainder pale. Wings subhyaline; with fine, short, dense vestiture along whole anterior margin of costal cell of front wing; venation rather strong, proximal two-thirds of submarginal vein with 12–13 conspicuous bristles; stigmal vein short, stigma large, quadrate, the stigmal sector short, both surrounded with narrow infuscation (Fig. 2); venation dark brown or black.

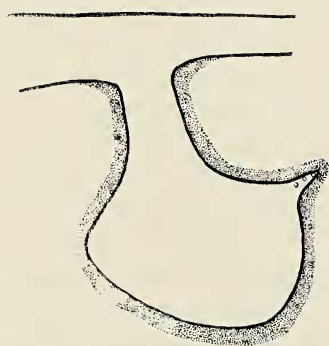


FIG. 2. Stigma of *P. maxima* male.

*Female*: Length 12.3 mm.; abdomen 5.5 mm. Ovipositor 31.5 mm. Structure of head and thorax, except for antennae and wings, much like that described for the male; scape compressed, slightly bent, about as long as pedicel, ring segment, FI, and one-half of FII combined; funicular segments subcylindrical,

decreasing slightly in length progressively in more distal segments, the proximal ones more than twice as long as thick. Propodeum only slightly depressed medially, sculptured with coarser more irregular rugae; abdomen compressed; ovipositor slender.

Head colored as in the male but less infuscated below and within antennal scrobe; antennae black except for the scape and pedicel, which are brown. Thorax colored as in the male but the median dorsal black stripe is more extensive and intensified, being weak or interrupted only on the anterior areas of both mesopraescutum and mesoscutellum; prepectus and mesepisternum lighter, and front and hind coxae without pronounced infuscation. Abdomen dark amber to brown except terga IV (apparent second) to VIII inclusive, each with yellow spot at side directed dorsad. Ovipositor sheath black.

Vestiture like that of male except proximal two-thirds of submarginal vein with about 14 conspicuous bristles, and dense vestiture present only on distal half of costal margin; wings subhyaline, venation strong, dark brown or black; stigma rather small (Fig. 3), somewhat oval, narrowly surrounded with infuscation; stigmal vein rather thick, about as long as greatest stigmal width, surrounded with narrow infuscation.

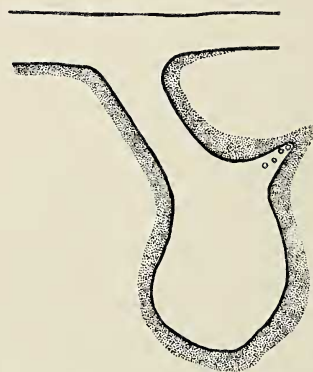


FIG. 3. Stigma of *P. maxima* female.

*Redescribed from male, reared August 30, 1944, from Pandanus seed collected at mouth*

of Evelyn River, Guadalcanal, August 23, 1944 (H. E. Milliron). Specimen in the collection of the U. S. National Museum.

**ALLOTYPE:** Female, with the same data as the male mentioned above except that it was reared August 25, 1944. Specimen in the collection of the U. S. National Museum.

**TYPE:** One of six males, probably in the Zoological Museum, Berlin, Germany. Type not examined.

**TYPE LOCALITY:** Taihanroku, Formosa.

**HOST:** Seeds of *Pandanus upoluensis* Martelli. (In the Solomon Islands.)

**DISTRIBUTION:** Formosa and Guadalcanal.

**ADDITIONAL SPECIMENS EXAMINED:** The writer also has studied a series of 86 males and 83 females, Mouth of the Evelyn River, Guadalcanal, 23 Aug. 1944, (H. E. Milliron). Ex seed of *Pandanus*. These are a part of the same lot as the above male and allotype female, and all were reared between August 23 and September 9, 1944. The *Pandanus* was later identified as *P. upoluensis*. The entire series is contained in the collection of the U. S. National Museum, 50 being preserved in alcohol.

**VARIATIONS:** *Male:* The lightest specimens are predominantly brownish- (and greenish-) yellow with reddish-brown over most of abdominal terga IV–VI inclusive, the black markings being reduced on the head to the area surrounding the ocelli and along a narrow line from the lateral ocellus to the compound eye, as well as narrowly around the foramen magnum. There is only a faint indication of the lateral spot above the eye (of the three spots on the vertex and temples). The three longitudinal stripes on the dorsum of the pronotum are reduced to separate elongate spots posteriorly, the median one being the faintest. Only an elongate black spot appears on the mesonotum, the remainder showing only faint traces of longitudinal black stripes. The propodeum is without trace of infuscation. The basal abdominal tergum (III) is blackish only at the base, and terga

IV–VI inclusive have only a slight indication of any black lateral spot above. All legs are yellowish.

The darkest male has pronounced black markings much as described but more intense and extensive. Most of the face below, except laterad of the clypeus and the area bordering the eyes in front, is very dark. The lateral spot above the eye is triangular, more enlarged, and extends down a considerable distance on the temples. The median spot extends posteriorly and unites with the black around the foramen magnum. A blackish extension appears on the front above, extending forward from the line described between the lateral ocellus and the compound eye. The lighter parts of the head are brownish to brownish-yellow. All lighter areas of the thorax are deeper than that described for the typical male, and there are three distinct dorsal longitudinal black stripes, the lateral one extending to the axilla and the median at least to the transverse line on the mesoscutellum (in some cases noticeably beyond), being only slightly interrupted at the anterior margin of the mesoscutellum. The front and hind coxae are blackish and the exterior surface of the hind femur is infuscated. The abdomen is much as described but the bands described as amber are black, and tergum VI is reddish-brown.

Between these two extremes all color gradations occur, but structurally there seems to be little variation. Larger, more robust males may be found with more distinct "verticillate" antennae and a few more conspicuous bristles on the proximal two-thirds of the submarginal vein (14–15). Males vary in size as follows: length 8.8–13.7 mm.; abdomen 3.8–5.3 mm.

*Female:* Females vary in color as do the males. The palest specimen is predominantly brownish- (or greenish-) yellow with black markings reduced on the head to the area around the ocelli and three spots on the vertex, with very little infuscation elsewhere.

The pronotum has the three separated longitudinal dorsal stripes which are weakest anteriorly. The continuation of these over the remainder of the thoracic dorsum is indicated by faint infuscation on the mesopraescutum and mesoscutum, while the mesoscutellum has a median, elongate oval blackish spot. All the legs are yellow. Only traces of infuscations are found on the propodeum and at the extreme base of the abdomen.

The darkest female has the color as described for the typical female but the scape and pedicel are dark brown to black. As with dark males, on some the black extends down onto the front from the line between the lateral ocellus and the compound eye. The lateral spot of the three on the head above is narrowly oval and on some it is extended as described for dark males. The median spot extends to unite with the black around the foramen magnum. The three black stripes on the dorsum of the thorax are very prominent and contrast with the adjacent greenish-yellow. The lateral stripe widens over the mesoscutum, becomes narrow posteriorly, and extends onto the axilla. The median stripe, which is abruptly broader at the anterior area of the mesopraescutum, becomes narrowed at the anterior margin of the mesoscutellum and extends considerably beyond the transverse line (on one specimen it extends almost the whole length). The coxae and femora and front tibia are infuscated, appearing for the most part dark brown or black. The propodeum is nearly entirely dark brown to black, and the abdomen, except for lateral yellow spots on terga IV–VIII as described, is also black.

Females vary in size as follows: length 10.0 (8 in curved position)–14.0 mm.; abdomen 4.4–6.6 mm.; ovipositor 24.0–33.0 mm.

COMMENTS: Specimens of this very variable species were all reared from seeds taken from the same *Pandanus* tree, which grew on the shore. The species is unusual in that it represents the largest species of Megastigmini

yet described. It probably occurs over most of the southwest Pacific. Females may be distinguished from those of the following new species by the more robust form, longer ovipositor, difference in appearance of the stigma, and several other characters.

*Pulvilligera neo-caledonica* n. sp.

*Female*: Length 9.5 mm.; abdomen 4.0 mm. Ovipositor 16.5 mm. Outline of head from above nearly circular but wider than long; vertex medially nearly flat, sublaterally somewhat depressed and with few shallow setigerous punctures; occipital carina sharp but not strongly developed, evenly arched except medially above; posterior ocellar line about equal to ocellular line and both about two-thirds as long as ocelloccipital line; antennal scrobe only moderately deep and not compressed, not markedly bent, and equal to combined lengths of pedicel, ring segment, FI, and about one-fourth FII; pedicel oval, only a little wider than funicular segments, which become slightly shorter progressively from FI–FVII inclusive, and are nearly cylindrical and at least 2.5 to 3 times longer than thick; sculpture below and laterad of antennal bases strongest, consisting of irregular arcuate rugulae directed more or less obliquely from the margin of the clypeus; dorsal area of front adjacent to eye extensively reticulate, and less so below anterior to fronto-genal suture; vertex and temples weakly sculptured at most. Pronotum a little longer than wide, broadly arcuate anteriorly and with only a shallow median emargination, traversed above by regular rugulae only moderately strong; remainder of thoracic dorsum similarly sculptured except that the axilla and mesoscutellum are less noticeably rugulose to nearly smooth, especially nearly the entire surface of the latter, which shows no evidence of any external transverse line; first segment of metatarsus equal to or slightly longer than combined lengths of segments 2–4 inclusive. Propodeum somewhat ele-

vated, with irregular carinae originating along anterior margin and directed posterolaterally, median ones strongest and forming an inverted V with arcuate sides, the posterior surface less strongly sculptured with transverse arcuate carinae; abdomen compressed, smooth and polished; ovipositor sheaths slender.

Color, brown and black. Head brown, darker above, over vertex, temple, and occiput; antenna black, scape and pedicel dark brown; thorax brown, with median longitudinal stripe darker (concolorous with abdomen) and a dorso-lateral lighter and less distinct longitudinal stripe most prominent over pronotum; legs brown, the middle pair somewhat lighter. Propodeum and abdomen uniformly dark brown; ovipositor sheath black.

Vestiture mostly dark brown to black; some hairs on antenna suberect to erect, and those on thorax and abdomen somewhat longer and finer; wings nearly hyaline; venation brown, approximate distal third of costal cell of front wing with short vestiture, denser and more noticeable anteriorly along margin; proximal two-thirds of submarginal vein with 14 or 15 conspicuous bristles; stigma rather small, oval, directed toward outer wing mar-

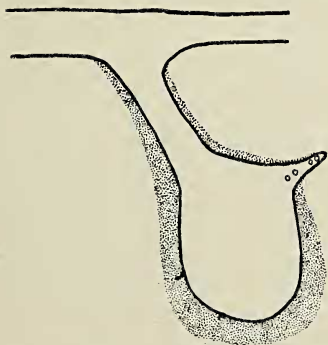


FIG. 4. Stigma of *P. neo-caledonica* female.

gin and surrounded by a narrow infuscation (Fig. 4), stigmal vein about as long as stigmal width.

*Male:* Length 9.5 mm.; abdomen 4.2 mm. Head similar to that of female, apparently

more sharply sculptured above; scape somewhat wider and more strongly curved; pedicel oval, much narrower than scape but distinctly wider than FI; all funicular segments long and slender, each not as markedly enlarged basally (and apically), with apparently somewhat fewer hairs (than in *P. maxima*); form of thorax and propodeum similar to that of female though somewhat more sharply sculptured, and the mesoscutellum appears weakly longitudinally striate; basal segment of metatarsus slightly shorter than combined lengths of segments 2-4. Abdomen subdepressed with tergum III (apparent first), smooth, the others finely aciculate.

Color similar to that of female except the scape is brownish-yellow and the remainder of the antenna black; abdominal tergum III dark brown; sterna, and remaining terga except amber posterior margin, are lighter brown.

Body pubescence similar to that of female. Denser vestiture on anterior margin of the costal cell of the front wing does not extend quite to base of cell; proximal two-thirds of the submarginal vein with about 15 conspicuous bristles; stigmal vein very short, the somewhat quadrate stigma sessile, both bordered by an infuscated area which is most extensive below the stigma (Fig. 5).

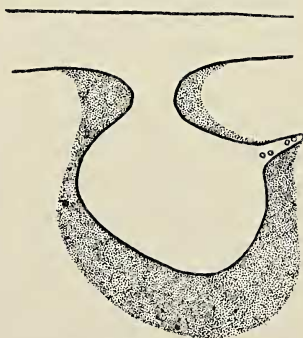


FIG. 5. Stigma of *P. neo-caledonica* male.

*TYPES:* Holotype, female, six miles east of Poindimie, New Caledonia, May 12, 1945 (H. E. Milliron). Ex *Pandanus* seed, May 20, 1945. U. S. National Museum catalogue

number 59289. Allotype, male, two paratype females, and a paratype male with the same data. All specimens are deposited in the collection of the U. S. National Museum, where is located another male (in rather poor condition, lacking both antennae beyond the pedicel) collected in Suva, Fiji, July 22, 1943, by R. A. Lever.

TYPE LOCALITY: Poindimie, New Caledonia.

HOST: *Pandanus tectorius* var. *neo-caledonicus* Martelli.

KNOWN DISTRIBUTION: New Caledonia, Fiji.

VARIATIONS: It is impossible, with so few specimens, to discuss fully the range of variation that exists in this species. Both structural and color differences are noted among the specimens at hand. The female may be slightly larger or noticeably smaller than the type, and the propodeum may be more coarsely and more irregularly sculptured. One paratype female is a little darker and the other considerably lighter, but in general the same pattern is manifested in all three females. The paratype male is slightly smaller and is paler over the lighter body regions, approaching a brownish-yellow (to somewhat greenish-yellow laterally on the mesoscutellum). The male from Fiji, aside from being considerably larger (length 11.0 mm.; abdomen 5.0 mm.), resembles the paler paratype.

COMMENTS: The specific and varietal name of the plant host, which was identified subsequently, does not appear on the labels. Although the basic thoracic color pattern of this species resembles that shown by *P. maxima* the two species are distinctly different. The shape of the stigma, weaker body sculpture, shorter basal segment of the metatarsus, and less extensive dense vestiture in the costal cell of the front wing, as well as the absence of three distinct spots on the dorsal region of the head, will serve to distinguish both sexes of this from *P. maxima*. In

addition, the females of *P. neo-caledonica* lack any distinct yellow pattern on the abdomen.

*Pulvilligera solomonensis* n. sp.

*Female*: Length 8.0 mm.; abdomen 3.5 mm. Ovipositor 17.0 mm. Outline of head from above broadly oval, about one-third wider than long; vertex nearly flat, traversed with fine rugulae barely attaining temples above; antennal scrobe moderately deep but not defined by sharp carinae dorsally; front with fine vertical rugulae which at the side converge toward the clypeus; gena and temple mostly smooth; posterior ocellar line about equal to the ocelloccipital line and one-third longer than the ocellocular line; occipital carina only moderately sharp, evenly arcuate above; scape more compressed beneath (or anteriorly) and only weakly bent; pedicel elongate oval, wider than FI and about one-half as long; funicular segments cylindrical, the proximal ones being more than twice as long as thick, the distal ones (FVI and FVII) about twice as long as wide. Pronotum about as long as its greatest width, the sides slightly arcuate in outline, the dorsal area with transverse rather regular rugulae, the side nearly smooth; mesopraescutum and mesoscutum similarly sculptured, the rugulae on the anterior area of the former being more arcuate and little sharper, behind less regular and more striate; axilla with more-or-less longitudinal striations; mesoscutellum without distinct sculpture (except anteriorly), posterior half nearly smooth; basal segment of metatarsus the longest but shorter than combined lengths of remaining segments. Propodeum with short irregular carinae anteriorly, the transverse median area with prominent arcuate carina, less distinctly sculptured behind; abdomen compressed; ovipositor sheaths slender.

Color reddish-amber or brownish-orange. Head mostly brownish or dark brownish-orange, the scape and pedicel brown, remainder of antenna black. Body and legs (the

latter though somewhat paler) brownish-orange, except pale median longitudinal infuscation on mesopraescutum and mesoscutellum; base of abdomen with little brown, and somewhat deeper amber distally above, otherwise abdomen is concolorous with thorax; ovipositor sheath black.

Vestiture throughout rather sparse and fine, that on head, body above, antenna, and ovipositor sheath black, elsewhere mostly pale. Wing subhyaline, its vestiture along the anterior margin of costal cell restricted to distal half; venation brown to dark brown; stigma rather small, more-or-less oval, and narrowly surrounded by infuscation (Fig. 6), the stigmal vein about as long as the greatest stigmal width.

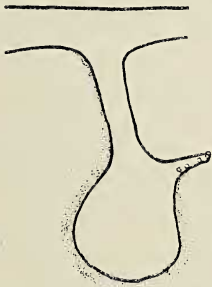


FIG. 6. Stigma of *P. solomonensis* female.

*Male*: Length 7.5 mm.; abdomen 3.5 mm. Form of head like that of the female; scape distinctly the widest segment of the antenna, compressed, and evenly curved; pedicel little wider than the base of FI; funicular segments all several times longer than wide, FI about equal to FVI, shorter than FII–V inclusive but longer than FVII, each noticeably swollen at the base but less so distally, the pubescence not dense and appearing less "verticillate" than in *P. maxima*. Sculpture of thorax and propodeum similar to that of female, the basal segments of the metatarsus distinctly shorter than the combined lengths of segments 2–5 inclusive. Abdomen depressed; tergum III (apparent first) smooth, those beyond very finely aciculate.

Color brownish-yellow and dark brown to

black. Coloration of head similar to that of the female; scape and pedicel brown, the former somewhat paler basally; remainder of antenna black. Thorax and legs brownish-yellow (or brownish-orange), dorsally with three rather distinct longitudinal brownish stripes, the median one extending over pronotum, mesopraescutum, and mesoscutellum approximately to the transverse line, and two dorso-lateral ones each extending over the pronotum and mesoscutum. Propodeum with some brownish color across the median area; abdomen dark brown to black above, median terga laterally and the sterna brownish-yellow.

Vestiture similar to that of female. Wing subhyaline, with dark brown to black venation; proximal two-thirds of submarginal vein with about 17–18 conspicuous bristles; dense vestiture along anterior margin of costal cell of front wing not extending quite to base of cell; stigma broadly oval (to subquadrate), nearly sessile, and surrounded by distinct infuscated area (Fig. 7).

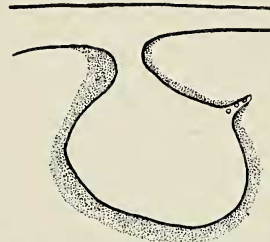


FIG. 7. Stigma of *P. solomonensis* male.

TYPES: Holotype, female, six miles from mouth of Tenaru River, Guadalcanal, August 13, 1944 (H. E. Milliron). Ex seed of *Pandanus*, reared August 14, 1944. U. S. National Museum catalogue number 59290. Allotype, male, with the same data. Paratypes: 44 females and 24 males, with same data as the type, all reared between August 14–25, 1944. All of these are deposited in the collection of the U. S. National Museum, as are 38 females and 6 males in alcohol, with the same data as the type except that these were reared on August 15, 1944.



TYPE LOCALITY: Mouth of Tenaru River, Guadalcanal, Solomon Islands.

HOST: *Pandanus* sp.

VARIATIONS: No significant variation in structure or color is noted among the series of females studied. Females which tend to be darkest show a pattern of brownish longitudinal stripes on the dorsum of the thorax very much like that described for the male, the median stripe being the stronger and especially conspicuous over the mesopraescutum and mesoscutellum to about the transverse line. Moreover, on such specimens usually the distal abdominal terga are darker brownish medially.

Except that the abdomen may be only subdepressed (and with some appearing as if petiolate) and the stigma may sometimes be more nearly circular, males of this species do not appear to vary significantly in structure. They do, however, show a marked range in coloration. Dark males are predominantly dark brown or black except that two dorso-lateral spots on the posterior margin of the pronotum, the inner angles of the mesoscutum and axilla, the extreme sides of the mesoscutellum, and the legs beyond the coxae are brownish-yellow. Several specimens of males lighter than these, but still darker than that described, have the anterior area of the pronotum entirely dark brown to black because of convergence of the longitudinal stripes, which are very prominent over the remainder of the thorax. The yellow on the thorax may vary from brownish-orange (or amber) to brownish-yellow.

COMMENTS: In coloration females of this species superficially resemble the North American *Megastigmus spermotrophus* Wach. All the material studied was reared from seeds taken from the same *Pandanus* tree. This species of host grows a considerable distance from the coast as isolated trees at the bottom of deep jungle ravines, and their ripe brilliant red fruit is seldom seen from the level of the jungle floor. The drupes are

similar to those of *P. motleyanus* Solms-Laub.

Females of this species may be distinguished from those of the preceding species by their distinctive color and by the shape of the stigma. Males may be recognized by the short stigmal vein, the appearance of the stigma, and by the usually depressed character of the abdomen.

#### NOTE

*P. gigantea* Gir. was described in 1928 from a female and a male taken at Townsville, Australia. It is possible that Girault's *Epimegastigmus titanus* (and *E. giganteus* referred to and compared in the description published in 1939) may belong to *Pulvilligera*. Inasmuch as no material of these species was available for study, the matter of their classification must remain unchecked temporarily.

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